

Conversion Guide

hp StorageWorks 3800ux/7100ux Optical Jukebox

First Edition (May 2004)

Part Number: AA991-96001

This guide describes procedures for converting an existing HP StorageWorks Jukebox from MO to UDO or mixed-media technology.



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About this Guide

This conversion guide provides information to help you:

- [Converting an existing MO jukebox to UDO technology \(making the unit UDO-ready\)](#)
- [Retrofitting and reinstalling 14x MO drives for a mixed-media jukebox](#)
- [Increasing number of drives in jukebox](#)

“About this Guide” topics include:

- [Related documentation](#), page 6
- [Conventions](#), page 7
- [Getting help](#), page 8

Related documentation

In addition to this guide, HP provides corresponding information:

- *HP StorageWorks 3800ux/7100ux Optical Jukebox Getting Started Poster*
- *HP StorageWorks 3800ux/7100ux Optical Jukebox Setup Guide*
- *HP StorageWorks 3800ux/7100ux Optical Jukebox User's Guide*
- *HP StorageWorks 3800ux/7100ux Optical Jukebox Service Manual*

Conventions

Conventions consist of the following:

- [Document conventions](#)
- [Text symbols](#)

Document conventions

This document follows the conventions in [Table 1](#).

Table 1: Document conventions

Convention	Element
Blue text: Figure 1	Cross-reference links
Bold	Menu items, buttons, and key, tab, and box names
<i>Italics</i>	Text emphasis and document titles in body text
Monospace font	User input, commands, code, file and directory names, and system responses (output and messages)
<i>Monospace, italic font</i>	Command-line and code variables
Blue underlined sans serif font text (http://www.hp.com)	Web site addresses

Text symbols

The following symbols may be found in the text of this guide. They have the following meanings:



WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or death.



Caution: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or data.

Tip: Text in a tip provides additional help to readers by providing nonessential or optional techniques, procedures, or shortcuts.

Note: Text set off in this manner presents commentary, sidelights, or interesting points of information.

Getting help

If you still have a question after reading this guide, contact an HP authorized service provider or access our web site: <http://www.hp.com>.

HP technical support

Telephone numbers for worldwide technical support are listed on the following HP web site: <http://www.hp.com/support/>. From this web site, select the country of origin.

Note: For continuous quality improvement, calls may be recorded or monitored.

Be sure to have the following information available before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

HP storage web site

The HP web site has the latest information on this product, as well as the latest drivers. Access the storage site at: <http://www.hp.com/country/us/eng/prodserv/storage.html>. From this web site, select the appropriate product or solution.

HP authorized reseller

For the name of your nearest HP authorized reseller:

- In the United States, call 1-800-345-1518
- In Canada, call 1-800-263-5868
- Elsewhere, see the HP web site for locations and telephone numbers: <http://www.hp.com>

Preparing for Conversion

1

Overview

This chapter explains what is needed to convert an existing jukebox into several configurations. The following topics are presented.

- [Conversion options and kits](#), page 10
- [Tools and firmware](#), page 12

Conversion options and kits

To convert a jukebox from a magneto optical (MO) system to an ultra-density optical (UDO) or mixed-media system, first make the existing MO jukebox UDO-ready. After this is complete, you can install new UDO drives in place of the MO drives, or in addition to retrofitted existing MO drives. The following sections describe the kit required for each option.

Converting an existing MO jukebox to UDO technology (making the unit UDO-ready)

Converting an existing MO jukebox to UDO technology involves converting the jukebox and installing four UDO drives as described in “[Install UDO drives in MO modules](#)” on page 31, and using Kit AA991A. Items included in the kit are listed in [Table 2](#). Converting to a unit with 10 UDO drives will also require kit AA992A described in the next section.

Table 2: Contents of Kit AA991A

Part Description	Quantity	Part Number
Upper Interposer board	1	AA969-67002
UDO drive, with cables	2	AA993-63001
SCSI jumper	2	AA969-63010
Buffer board	1	AA965-67002
LVD SCSI terminator	1	5183-2657
Upper interposer to buffer LVD 68-pin SCSI cable	1	AA969-63002
Upper interposer to controller 50-pin GPIO cable	1	AA969-63004

Retrofitting and reinstalling 14x MO drives for a mixed-media jukebox

If you are retrofitting and reinstalling MO drives, do so after you have made the jukebox UDO-ready. Four existing 14x MO drives will be retrofitted and reinstalled using the instructions in “[Retrofit and reinstall MO drives](#)” on page 33. Use Kit AA992A.

Note: This procedure is done only after making the jukebox UDO-ready.

Items included in the kit are listed in [Table 3](#).

Table 3: Contents of Kit AA992A¹

Part Description	Quantity	Part Number
Lower interposer board	1	AA965-67003
Second buffer board	1	AA965-67002
LVD SCSI terminator	1	5183-2657
SCSI jumper cable	1	AA969-63010
Lower interposer to buffer LVD 68-pin SCSI cable	1	AA969-63003
Second power supply 200	1	C1107-60032
AC and DC power cables	1 of each	N/A

Table 3: Contents of Kit AA992A¹ (Continued)

Part Description	Quantity	Part Number
Blank drive assembly	1	AA969-62005
Media detect station	1	AA968-04001
MO drive ACI cable (1 per 2 drives)	2	AA969-63005
MO drive cable (1 per 2 drives)	2	AA969-63007
Configuration module	1	C1104-66502

The SCSI jumper cable, the power supply, and the configuration module that come with this kit may not be needed for this procedure. HP recommends that you remove them from the customer site and dispose of them.

Note: Only 14x MO drives can be upgraded and included in a mixed-media jukebox. 2x, 4x, and 8x MO drives are not supported in a mixed-media configuration.

Increasing number of drives in jukebox

A jukebox can be upgraded from 4 or 6 drives to contain 6 or 10 drives. For each additional 2 UDO drives added to the jukebox, use Kit AA993A, the contents of which are presented in [Table 4](#).

Table 4: Contents of Kit AA993A

Part Description	Quantity	Part Number
UDO drive	2	AA961-67001
Drive brackets assembly	2	AA993-63002
UDO drive ACI cable	2 (1 per drive tray)	AA969-63008
UDO LVD drive cable	2 (1 per drive tray)	AA969-63006
UDO drive power cable	2 (1 per drive tray)	C1107-61620

Increasing slot capacity

If the existing jukebox has only 128 slots and the customer is upgrading capacity to 238 slots, a capacity module will be needed to allow the system to use the additional slots. Use Kit C1159P, the contents of which are presented in [Table 5](#).

Table 5: Contents of Kit C1159P

Part Description	Quantity	Part Number
Configuration Module	1	C1104-66502

Tools and firmware

When upgrading or converting the library, connect your PC to the jukebox to perform the following two tasks:

- Download firmware to the jukebox controller and drives.
- Verify proper operation of the drives after conversion or firmware installation.

Specific tools and firmware are required.

Tools

- Compatible host computer on which to run HP StorageWorks Library and Tape Tools (L&TT)
- HP StorageWorks Library and Tape Tools, which can be downloaded from <http://www.hp.com/support/tapetools>
- For laptops, Adaptec APA-1480/60 single-ended, high-density male cable with a high-byte terminated adapter (50-pin high-density female to 68-pin high density male)
- T-10, T-15, and T-20 Torx drivers

Firmware

The first step in performing a conversion is to obtain the most current version of the jukebox controller and drive firmware for the model and option of the jukebox to which you are converting. Firmware can be downloaded from <http://www.hp.com/go/support>. Follow the menu choices to the firmware for this jukebox.

Convert an MO Jukebox to UDO or Mixed-Media Technology

2

Overview

Converting an MO jukebox to UDO or mixed-media technology requires that the following procedures be performed.

- [Upgrade the firmware](#), page 14
- [Access inside the jukebox](#), page 15
- [Remove existing drives](#), page 18
- [Remove the interposer board\(s\)](#), page 19
- [Remove the SCSI interface PCA\(s\)](#), page 20
- [Remove obsolete cables](#), page 21
- [Install an expansion \(lower\) power supply](#), page 22
- [Install and cable the buffer board\(s\)](#), page 24
- [Install new interposer board\(s\)](#), page 25
- [Install and reconnect cables](#), page 29
- [Install the drive modules](#), page 31

Upgrade the firmware

Before performing the hardware conversion, upgrade the firmware to the correct level for UDO jukeboxes.

Note: Use HP StorageWorks Library & Tape Tools (L&TT) to get the proper firmware. Download this software and the corresponding user's guide on the web from <http://www.hp.com/support/tapetools>.

1. If there are disks in any of the drives, use the control panel to remove them.
2. Record the customer's default configurations so that the jukebox can be correctly restored, if necessary.

Go to the CONF* menu on the control panel to access and display the current jukebox configurations.



Caution: Do not switch off power to the jukebox until you are sure the SCSI bus is inactive. Switching off the jukebox when the SCSI bus is active can cause data loss and/or indeterminate bus states.

3. If the host computer does not have HP StorageWorks Library and Tape Tools (L&TT), you will need to connect to a laptop that does have L&TT to update the jukebox firmware. To do so, perform the following tasks.
 - a. Power off the jukebox.
 - b. Ensure that your host computer is also powered off and disconnect it from the jukebox.
 - c. Remove any cable connections to the single-ended ports on the interface module.
 - d. Connect a SCSI cable between your laptop computer and the 50-pin single-ended SCSI ports on the SCSI interface PCA. (If there are two SCSI interface PCAs, connect to the PCA that is attached directly to the module.)
 - e. Power on the laptop computer and the jukebox.
4. Follow the HP StorageWorks L&TT instructions to download the UDO jukebox firmware.
 - Download firmware for an AA969A for a UDO-only conversion.
 - Download firmware for an AA974A for a mixed-media conversion.

Note: This will require an override because the UDO firmware does not match the hardware ID string, which is still MO technology. Set CONFIG 40 to ON from the jukebox OCP. Also, the jukebox display will likely show DEVICE FAILED. Again, this is because the MO hardware, which is HVD or S/E SCSI, is still in place, and UDO requires LVD.

5. Wait until the jukebox is at the READY or DEVICE FAILED or FIRMWARE MISMATCH state after the download.
6. If a laptop is connected to the jukebox in step 3, power off the jukebox and disconnect the laptop at this time.

Access inside the jukebox

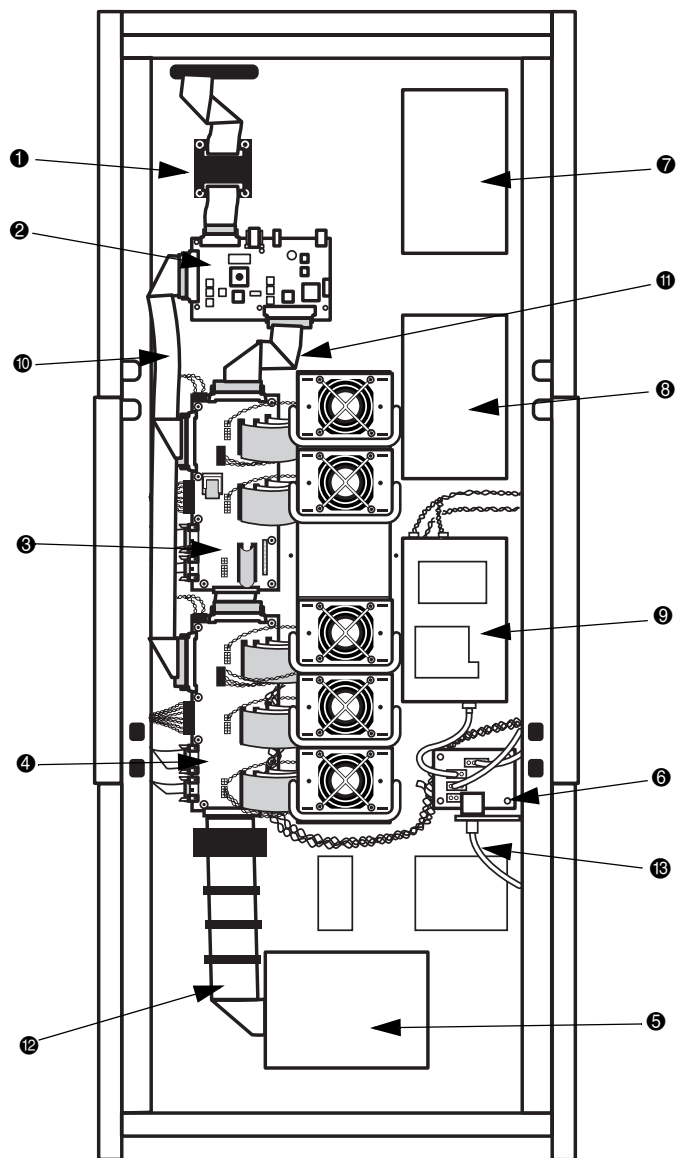
To access inside the jukebox:

1. Power off the jukebox using the power switch, located in the upper opening on the back of the jukebox.



Caution: Do not switch off power to the jukebox until you are sure the SCSI bus is inactive. Switching off the jukebox when the SCSI bus is active can cause data loss and/or indeterminate bus states.

Note: For steps 2 - 4, please refer to [Figure 1](#), page 16.



- | | |
|--------------------------|---|
| ① Filter board | ⑦ Power supply for jukebox |
| ② Controller board | ⑧ Power supply for upper interposer board |
| ③ Upper interposer board | ⑨ Power supply for lower interposer board |
| ④ Lower interposer board | ⑩ 50-pin GPIO cable |
| ⑤ SCSI interface module | ⑪ 50-pin library SCSI cable |
| ⑥ AC relay board | ⑫ 68-pin SCSI cable |
| | ⑬ Power cable |

Figure 1: Jukebox features (view from the right side)

2. Unplug the jukebox.
3. Remove outer access panels on the right of the jukebox, as you face the jukebox front:
 - a. Remove the bottom access panel by pulling the bottom of the panel away from the jukebox, then lifting the panel from the jukebox.
 - b. Remove the middle access panel by removing the 2 T-20 torx screws from the bottom of the panel and lifting the panel from the jukebox.
 - c. Remove the top access panel by removing the 2 T-20 torx screws from the bottom of the panel and lifting the panel from the jukebox.
4. Remove the two inner access panels by removing the 7 T-20 torx screws that secure each panel and removing the panels from the unit.

Remove existing drives



Caution: Parts can be damaged by electrostatic discharge. Keep parts in their containers until needed. Ensure you are properly grounded when touching static-sensitive components.

To remove existing drives:

1. Disconnect cables that connect the drives to the interposer board at the interposer board end.
2. For each drive module, remove the 2 T-20 torx screws from each side of the drive module (4 screws total).
3. Carefully slide the drive module back and out of the chassis.

Note: If you are converting to mixed-media, set aside the drive modules for later use. If you are converting to UDO only, discard or recycle these drives.

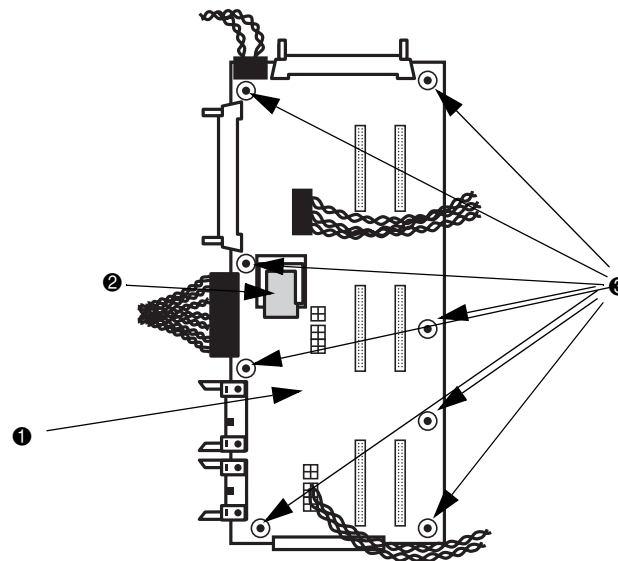
Remove the interposer board(s)



Caution: Parts can be damaged by electrostatic discharge. Keep parts in their containers until needed. Ensure you are properly grounded when touching static-sensitive components.

To remove the interposer board(s):

1. Remove all cables from the interposer board(s).
Jukeboxes with 4 or 6 drives will have only one interposer board. Jukeboxes with 10 drives will have two interposer boards (see [Figure 1](#)).
2. If there is a configuration module on the upper interposer board, remove it and set it aside for later use.
3. For each interposer board, remove the 8 T-20 torx screws that secure it to the jukebox (see [Figure 2](#)).
4. Remove the interposer board(s) from the jukebox.
5. Discard or recycle the interposer board(s).



- ❶ Upper interposer board
- ❷ Configuration module

- ❸ Screws

Figure 2: Upper interposer board and screws that secure it to the jukebox

Remove the SCSI interface PCA(s)



Caution: Parts can be damaged by electrostatic discharge. Keep parts in their containers until needed. Ensure you are properly grounded when touching static-sensitive components.

To remove the SCSI interface PCA(s):

1. Remove the SCSI interface PCA module(s) from the jukebox by removing the 2 screws that secure it to the jukebox and pulling it from the jukebox frame.
2. Remove all cables from the SCSI interface PCA module(s).
3. Remove the 6 T-15 screws that secure the SCSI interface PCA to the module.
4. Remove the SCSI interface PCA from the module.
5. If there is a second SCSI interface PCA, remove it as well.
6. Throw away all terminators (including the 68-pin terminators) from the obsolete SCSI interface PCA(s). New LVD SCSI terminators are required and are provided with the kits.
7. Discard or recycle the PCA(s).

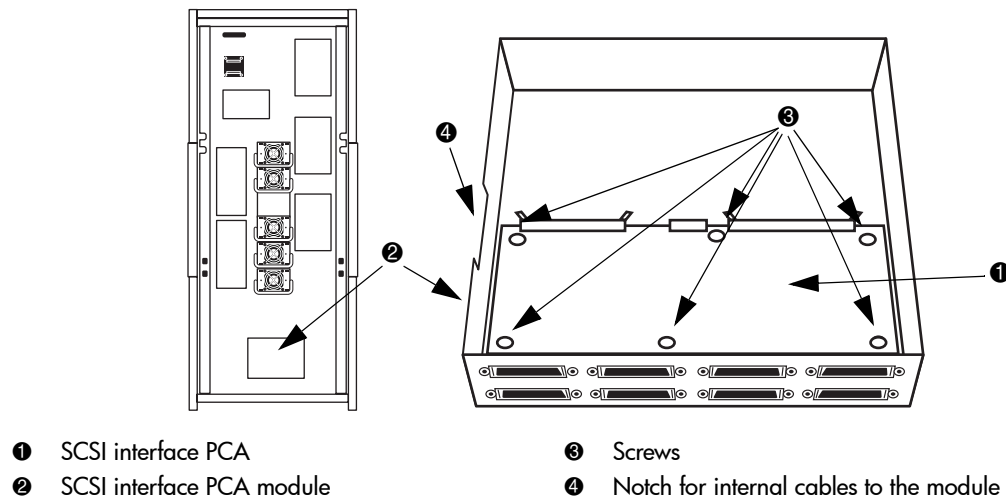


Figure 3: SCSI interface PCA

Remove obsolete cables

Note: For both of these steps, see [Figure 1](#) for cable locations.

To remove obsolete cables:

1. Remove and discard the GPIO cable, which runs from the controller board to the interposer board(s) and to the SCSI interface module.
2. Remove and discard the single-ended SCSI cable(s) that connected the interposer board(s) to the SCSI interface module.

Install an expansion (lower) power supply

Note: This procedure is required only if you are upgrading a 4- or 6-drive system to a 10-drive system.

To install a lower power supply:

1. Place the lower power supply on the brackets below the existing power supplies (see [Figure 1](#)).
2. Secure the lower power supply to the jukebox using 2 T-20 torx screws (at the top corners of the power supply).
3. Connect the power switch cable to the lower power supply (see [Figure 4](#)).

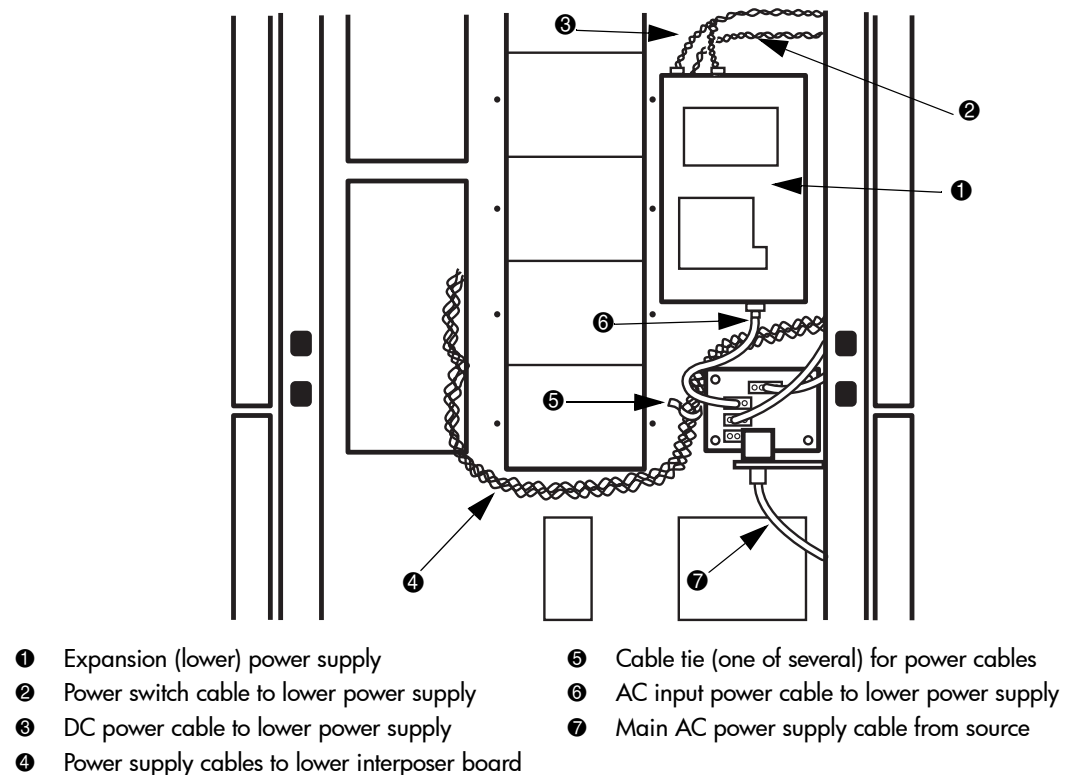


Figure 4: Connect power cable to power supplies

4. Connect the DC power cable to the lower power supply.
5. Route the bundled power supply cables (item 4 in [Figure 4](#)) to the right of the lower power supply, below the lower power supply and the drive bays, to the interposer board.

Note: The cable ties have buttons that snap into the jukebox chassis, guiding the cables to their proper location and keeping them secure and out of the way.

6. Connect the bundled power supply cables to the lower interposer board, as dictated by the lengths and connection types.

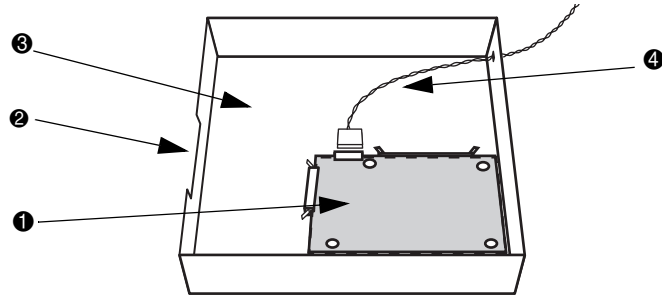
7. Connect the AC input power cable from the AC distribution PCA to the lower power supply.
8. Connect the main AC power cable, but leave it unplugged from the AC source until the jukebox is reassembled.

Install and cable the buffer board(s)

To install and cable the buffer board(s):

1. Place the buffer board where the SCSI interface PCA used to be (see [Figure 5](#)).

Note: The buffer board is narrower than the SCSI interface PCA. Align the buffer board to the right side of the module as you face the module from the back of the jukebox.



- | | |
|---------------------|-------------------------------|
| ① Buffer board | ③ Buffer board module |
| ② Cable access slot | ④ Power cable to buffer board |

Figure 5: Buffer board

2. Secure the buffer board to the module.
 - If you have a 4-drive or 6-drive jukebox, use 4 of the screws that previously secured the SCSI interface PCA (see [Figure 5](#)).
 - If you have a 10-drive jukebox, use the 4 standoffs (supplied) to secure the buffer board to the module.

This buffer board connects to the upper interposer board.

3. For a 10-drive jukebox:
 - a. Stack the second buffer board on top of the first buffer board.
 - b. Use 4 of the screws that previously secured the SCSI interface PCA to secure the second buffer board to the standoffs.

This buffer board connects to the lower interposer board.

WARNING: Do not reuse the terminators from the SCSI interface PCA. They are high-voltage differential (HVD); the new equipment can use only low-voltage differential (LVD/SE) terminators supplied.

4. Connect the new internal orange and white LVD SCSI cable(s) to the buffer board(s).
5. Connect the power cables to the buffer board(s).
6. Route the LVD SCSI cable(s) through the cable access slot on the left of the module (see [Figure 5](#)).
7. Reattach the buffer board module to the jukebox using the 4 T-20 torx screws previously removed.

Install new interposer board(s)

To install the new interposer board(s):

1. Install the upper interposer board.
 - a. Align the upper interposer board in its proper location (see [Figure 1](#), page 16).
 - b. Connect the interposer board to the jukebox frame using 8 T-20 torx screws.
 - c. Clean the chassis in the (vertical) area where the LVD SCSI cables will be routed from the buffer board(s) to the interposer board(s).
 - d. Connect the appropriate LVD SCSI cable from the buffer board to the the upper interposer board (see [Figure 6](#)).

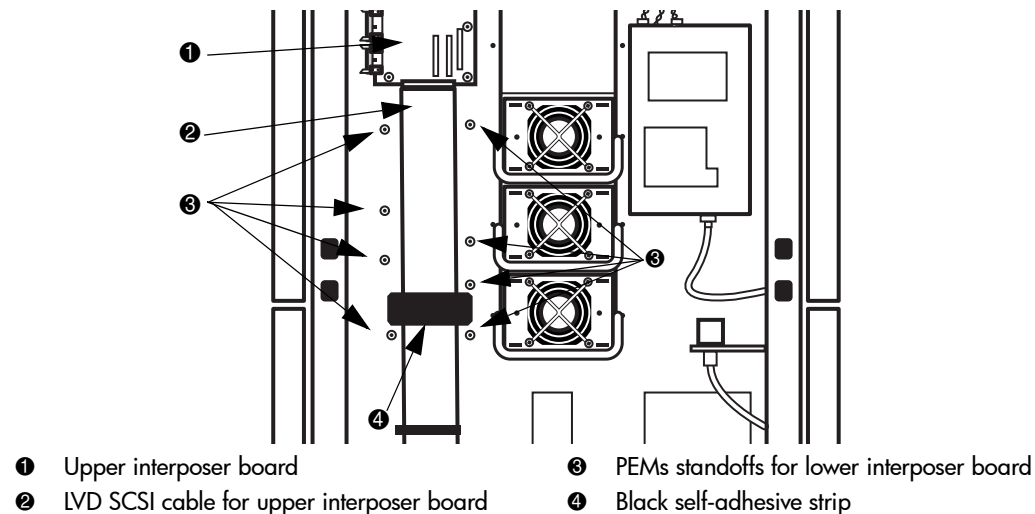


Figure 6: Secure the upper interposer LVD SCSI cable to the jukebox frame

- e. Locate the black self-adhesive strip that shipped with the kit and remove the backing to expose the adhesive.
 - f. Position the LVD SCSI cable exactly vertical, or slightly to the right of vertical from the upper interposer board to the buffer board. Maintain this alignment until the cable is secured to the library frame.
 - g. Use the black self-adhesive strip to secure the LVD SCSI cable to the jukebox frame between the bottom two sets of PEMs standoffs for the lower interposer board (see [Figure 6](#)).
This strip will be covered by the lower interposer board, if one is installed.
 - h. Connect the interposer board power cables.
 - i. If appropriate, install the configuration module to the upper interposer board (see [Figure 2](#), page 19).
2. For a 10-drive jukebox, install the lower interposer board.
 - a. Align the lower interposer board in the location for the lower interposer board.
 - b. Connect it to the jukebox frame using 8 T-20 torx screws.
 - c. Connect the appropriate LVD SCSI cable from the buffer board to the lower interposer board (see [Figure 6](#)).

- d. Locate the black self-adhesive strip that shipped with the kit and remove the backing to expose the adhesive.
- e. Position the LVD SCSI cable for the lower interposer board so that it is aligned vertically with the LVD SCSI for the upper interposer board. Push the lower interposer board's cable up slightly so that it forms a curve between the connector and the jukebox frame (see [Figure 7](#)).

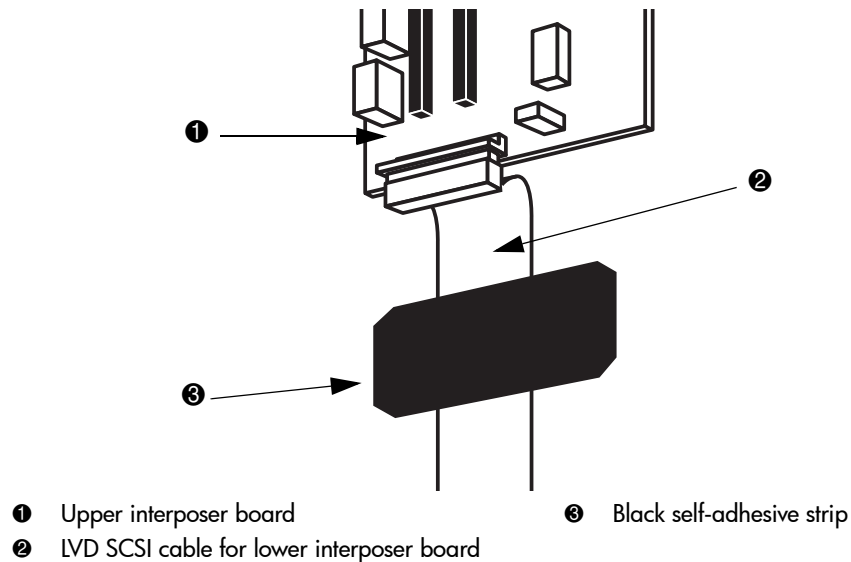
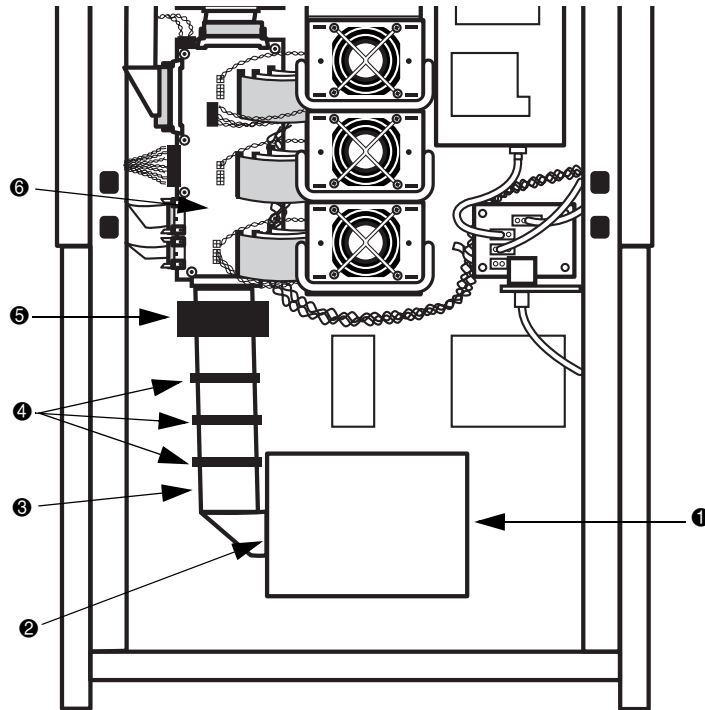


Figure 7: Secure the upper interposer LVD SCSI cable to the jukebox frame

- f. Use the black self-adhesive strip to secure the LVD SCSI cable to the jukebox frame approximately one inch below the SCSI connector (see [Figure 7](#)).

Note: Ensure that there is at least 1 inch (25 mm) of the black self-adhesive strip on either side of the LVD SCSI cables, and that the distance between the SCSI connector and the top of the strip is at least 7/8 inch (22 mm). This is necessary for proper fit of the middle access panel.

3. Attach the three cable clamps to the jukebox below the black self-adhesive strip to secure the cables to the frame (see [Figure 8](#)).



- | | |
|-----------------------|-----------------------------|
| ❶ Buffer board module | ❷ Cable clamps |
| ❸ Cable access slot | ❹ Black self-adhesive strip |
| ❺ LVD SCSI cables | ❻ Lower interposer board |

Figure 8: Routing and securing LVD SCSI cables

4. Connect the existing 50-pin library SCSI cable to the upper interposer board (see [Figure 9](#)).

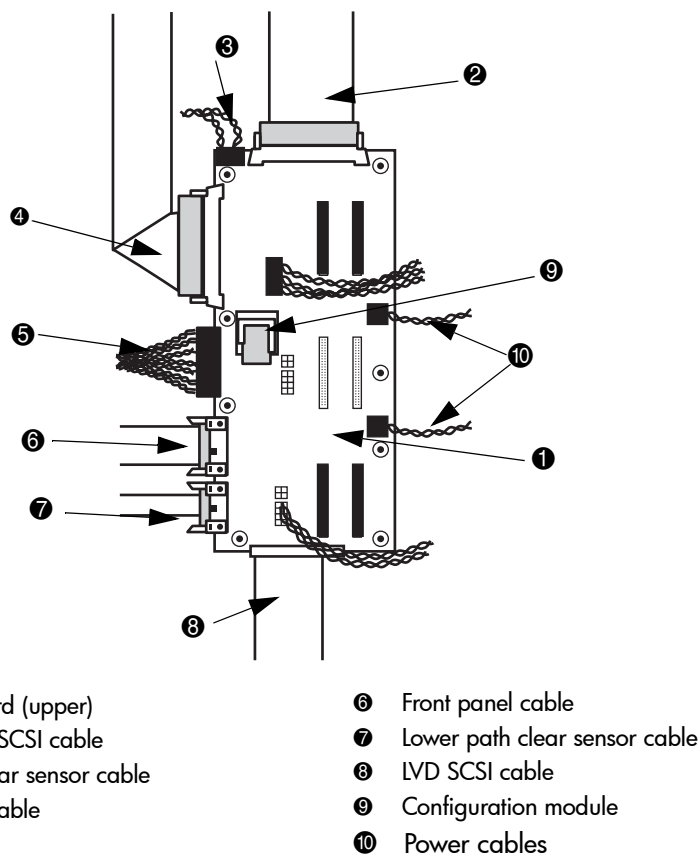
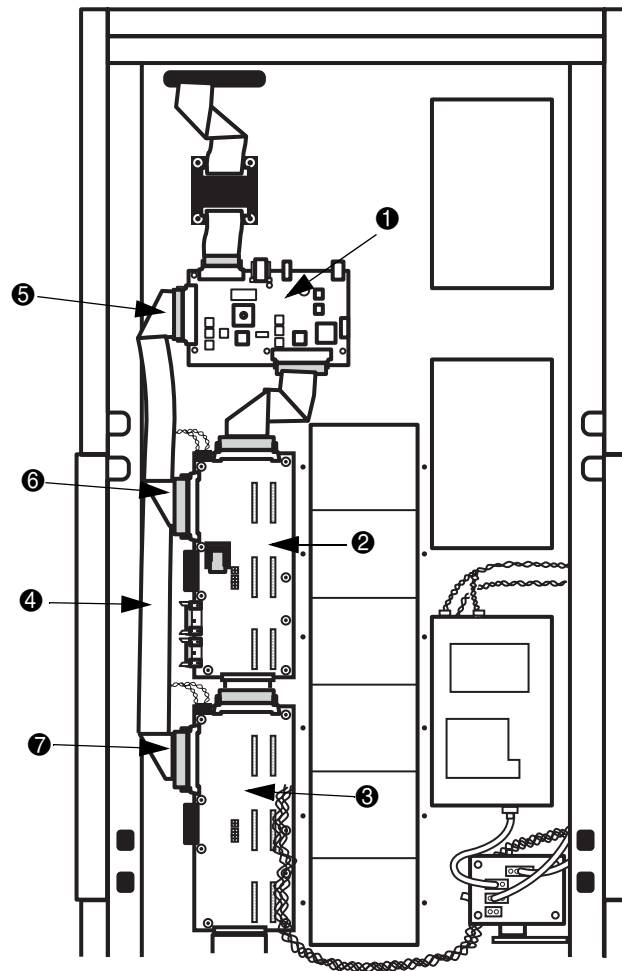


Figure 9: Cable connections for drives and upper interposer board

Install and reconnect cables

To install the new cables:

1. On the upper interposer board, connect the following cables:
 - Upper path clear sensor cable
 - Front panel cable
 - Mailslot cable
2. Locate the 50-pin GPIO cable and position it so that the center polarizing keys face you, and the interposer connectors are to the right.
3. Attach the cable connector to the controller board (see [Figure 10](#)).



- ① Controller board
- ② Upper interposer board
- ③ Lower interposer board

- ④ 50-pin GPIO cable
- ⑤ 50-pin GPIO cable connected to controller board
- ⑥ 50-pin GPIO cable connected to upper interposer
- ⑦ 50-pin GPIO cable connected to lower interposer

Figure 10: 50-pin GPIO cable connections

4. Attach the middle connector to the upper interposer board.
5. Attach the lower connector to the lower interposer board, if present.

Note: Note that the new GPIO cable no longer connects to the buffer board.

Install the drive modules

Install UDO drives in MO modules

To install UDO drives into MO modules:

1. Remove the MO drives from the existing MO modules.
2. Assemble the UDO drives into drive modules. For each drive:
 - a. Insert the drive into the sheet metal drive module.
 - b. Connect the cables to the drive and thread them through the holes in the module.

Note: Make sure you route the drive cables through the drive cable clamps.

- c. Secure the drive to the module using two screws per side (supplied) on both sides of the module.
 - d. Install and secure the cable access panel on the drive module.
3. For a 4-drive jukebox, insert the two UDO drive modules into place at drive locations 1/2 and 3/4 (see [Figure 11](#)).

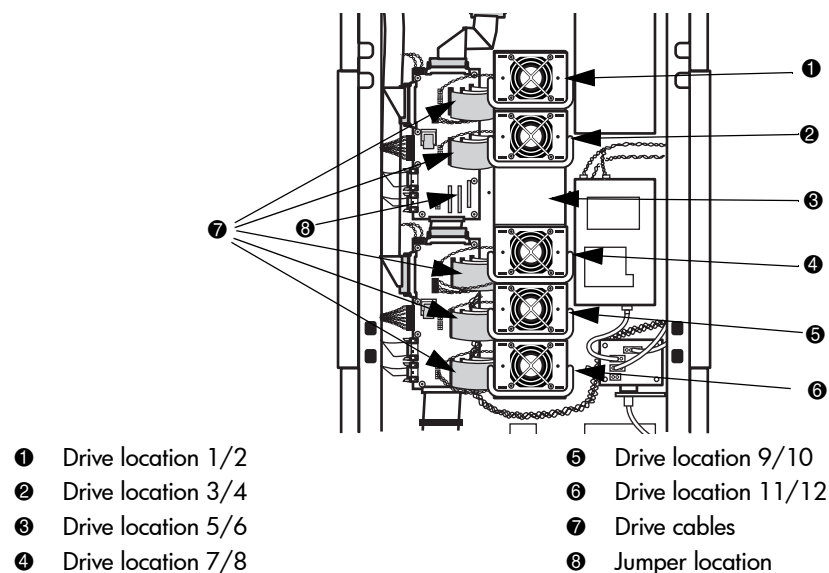


Figure 11: Connection of drive cables and jumpers to the interposer board(s)

4. For a 6-drive or a 10-drive mixed-media jukebox, insert the three UDO drive modules into place at drive locations 5/6, 3/4, and 1/2, in this order.
5. For a 10-drive UDO-only jukebox, insert the drive modules in all locations except 5/6. Locations 5/6 are to remain empty in this configuration.
6. Secure the UDO drives to the jukebox using 2 T-20 torx screws, 1 on each side of each drive.

Note: If you are having problems installing the drive module in drive location 11/12, push the module down and slightly to the right.

7. For each drive, connect the drive cables to the interposer board (see [Figure 12](#)).

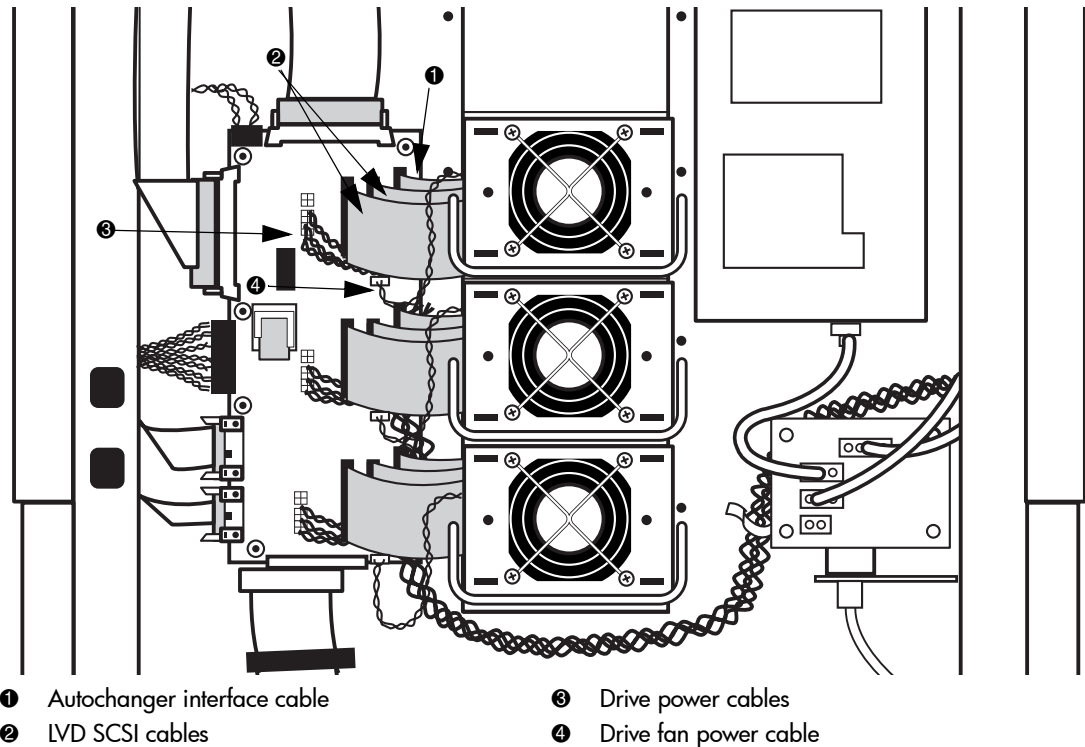


Figure 12: Cable connections for a drive to an interposer board

8. For a 10-drive UDO-only jukebox, or a 4-drive jukebox, connect the SCSI jumpers to the interposer board at drive location 5/6 (see [Figure 13](#)).

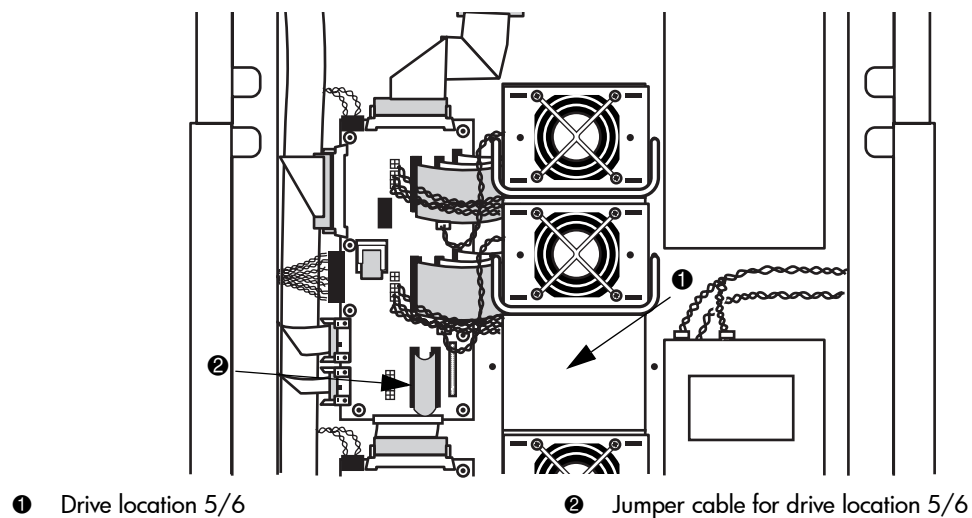


Figure 13: Jumper connections for drive location 5/6

9. For a 10-drive UDO-only jukebox, connect the interposer power cable.

Retrofit and reinstall MO drives

If the customer is not keeping 4 MO drives for a mixed-media configuration, do not follow the procedures in this section. Instead, continue with “[Testing the conversion](#)” on page 36.

If the customer is keeping their MO drives, they must be retrofitted and reinstalled in the jukebox after the jukebox is converted and the UDO drives are installed.

Note: Only 14x MO drives can be upgraded and included in a mixed-media jukebox. 2x, 4x, and 8x MO drives are not supported in a jukebox with UDO technology.

The procedures for retrofitting and reinstalling are as follows.

1. Remove the SCSI and ACI ribbon cables from the MO drives. The power cable will be re-used.
2. On each drive:
 - a. Attach the 50-pin to 68-pin converter (P/N 1200-1997) to the SCSI port of the drive.
 - b. Attach the LVD SCSI cable (larger of the ribbon cables, P/N AA969-63005) to the 68-pin side of the 50-pin to 68-pin converter.
 - c. Attach the autochanger interface cable (smaller of the ribbon cables, P/N AA969-63007) to the drive.
3. Install the media detect station into the 11/12 drive location.

Note: If you are having problems installing the drive module in drive location 11/12, push the module down and slightly to the right.

4. Slide the MO drives into drive locations 7/8 and 9/10.
5. Secure the MO drives to the jukebox using 2 T-20 torx screws, 1 on each side of each drive.
6. Connect the drive cables to the interposer board (see [Figure 12](#), page 32).
7. Attach the jumper cable at drive location 11/12.
8. Add the configuration module if required. If the customer already has a configuration module, the one from the kit is not needed. You may return it to your sales representative or discard it.
9. Attach the interposer board power cables.
10. Attach the terminator.
11. Attach the label cover over the old unused HVD and S/E ports of the buffer board.
12. Assure the new LVD terminator is in place, and notify the customer that the HVD and S/E terminator can no longer be used.

Completing the Conversion

3

Overview

To complete the conversion process, perform the following tasks:

- [Testing the conversion](#), page 36
- [Finishing the firmware upgrade](#), page 37
- [Labeling the jukebox](#), page 39

Testing the conversion

1. Connect the jukebox to power.
2. Power on the jukebox by setting the power switch to the on position.
3. Verify that the display comes on. It may still read `DEVICE FAILED`, but that is acceptable at this point. If the display does not come on, check the cabling.

Finishing the firmware upgrade

To finish the firmware upgrade:

1. Power on the jukebox, if necessary, and wait for the power on sequence to complete.
The front panel displays the jukebox status. It should display `READY`, but may still display `DEVICE FAILED`.
2. Select `ADMIN* > CONF*` on the control panel, then use the `NEXT` key until you see `RESTORE DEFAULTS` in the display.
3. Press `ENTER` to select `RESTORE DEFAULTS`, then wait until `WAIT FOR UPDATE` is no longer shown.
4. Connect to a host running L&TT, if necessary.
 - a. Power off the jukebox.
 - b. Connect to the jukebox the computer which hosts L&TT.
 - c. Power on the jukebox.

Note: `READY` should display once the jukebox has completed its power on procedure. If `DEVICE FAILED` displays instead, check to be certain that the hardware is correctly installed and repeat these procedures until `READY` displays.

5. Power off and on the jukebox (you must do this a second time even if you performed the previous step).
6. When the jukebox displays `READY`, run L&TT to ensure that the jukebox and all drives are found.

Note: If L&TT does not recognize all of the drives, check that the cabling is installed correctly and repeat these procedures until all drives are found.

7. If necessary, upgrade the firmware for all of the drives using L&TT.
8. The jukebox firmware should already be up-to-date. If it is not, update it now.

Note: If you did not download the UDO jukebox firmware first, you may have to disconnect all drives, download jukebox firmware, connect drives, and download drive firmware again.

9. Verify proper jukebox operation:
 - a. Check for proper drive operation by running a “random write and verify” for approximately 2 minutes.
 - b. Using a new disk or a re-writable with unneeded data, check for proper jukebox operation by running the “wellness test.”
10. Enter any customer configurations that are different from the default using the `CONF*` menu.

11. If the jukebox was connected to a laptop to run L&TT, reconnect it to its usual controller.
 - a. Power off the jukebox.
 - b. Power off the computer running L&TT and disconnect it from the jukebox.
 - c. Reconnect the host computer to the jukebox.
 - d. Power on the jukebox, then wait until the jukebox shows READY in the display.
 - e. Power on your host computer.

Note: If a failure occurs, refer to the troubleshooting section in the *HP StorageWorks 3800ux/7100ux Optical Jukebox Service Manual*.

Labeling the jukebox

To update the product nameplate and upgrade label:

1. Use [Table 6](#) to select the correct nameplate and product label.

Table 6: Select product label

Jukebox characteristics	Nameplate	Label
No configuration module and 4 UDO drives	Model No. 3800ux	"Product has been upgraded to AA969A"
No configuration module and 6 UDO drives	Model No. 3800ux	"Product has been upgraded to AA970A"
Configuration module and 6 UDO drives	Model No. 7100ux	"Product has been upgraded to AA971A"
Configuration module and 10 UDO drives	Model No. 7100ux	"Product has been upgraded to AA972A"
Configuration module and 4 UDO drives	Model No. 7100ux	"Product has been upgraded to AA973A"
Configuration module and 6 UDO and 4 MO drives	Model No. 7100ux	"Product has been upgraded to AA974A"

2. Place the product label partially over the existing product label inside of the jukebox, making sure the serial number above the buffer board module remains uncovered.
3. Place the new product nameplate on the front of the jukebox, covering the existing nameplate.

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